

Abstract Submitted
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Causal, Self-consistent Field Quantum Mass-Spacetimes DILLON SCOFIELD, Dept. Physics, Oklahoma State University — An ab initio self-consistent field (SCF) description of the causal, current conserving, evolution of quantum mass-spacetime (QMST) manifolds is presented. The properties of QMSTs are shown to follow from the properties of their homogeneous, isotropic, affine tangent spaces as characterized by the Poincar group. QMSTs with $C(4,C)$ Clifford algebra structure and tangent spaces are shown to be compatible with the Standard Model of elementary particle interactions. These QMSTs include the proton-electron-neutrino-neutron excitation system. Expressions for conserved Noether currents, stress-energies, and angular-momenta are shown to be corollaries of the theory. Methods to compute the quantum geometry of few-body QMSTs are discussed.

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